

\* = "Addendum to Draft Final Study"

$$\therefore 8712,760 \times 2 = 1,425,520$$

Traceroute File: Assumption: double surface area of pipe \*

(Cost Calculation of Areas 2-8 vs just Areas 2+3 (ie, Alternative D, Table 17 of FS))

$$(168,456) / 3 = 112,380 \text{ yd}^3$$

Quantity to be actually removed =

Excavated due to piping, structures, etc.

Assumption: Only  $\frac{2}{3}$  of surface area of a typical residue will need to be

$$= 168,456 \text{ yd}^3$$

$$= 454,812 \text{ ft}^3$$

$\times 0.5, \$/\text{ft}^3/\text{residue}$

$$= (14 \text{ large blocks} \times 34 \text{ residues/block} \times 17.5, \times 125 + 144 \text{ small blocks} \times 12 \text{ ft}^3/\text{block} \times 17.5, \times 125)$$

Total Cost:

Assumption: square blocks (17.5 x 17.5) = small blocks  
Assumption: "typical depth to achieve 500 ppm lead cleanup level

Small: 44

Large: 14

Best Estimate of all Blocks Residuum

Small: 44

Large: 14

# Blocks in Areas 2-8:

$$\begin{aligned} \text{Small} &= 24 \text{ residues/block} * \\ \text{Large} &= 34 \text{ residues/block} * \end{aligned}$$

$$45,000, \times 125,$$

Exact Granite City Block Size:

Alternative H

Revised Cost Calculations for Alternatives E, F, G, and H

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### Areas 2-8 vs. Areas 2+3

Assume: with Areas 2-8, soil quantity is eight times higher\* and # of yards to be excavated is quadrupled\*

∴ clear/replace = 179,000 × 4	= \$ 716,000
manual excav. = 210,500 × 8	= \$ 1,684,000
light equip excav. = 278,000 × 8	= \$ 2,224,000
load + transport = 86,000 × 8	= \$ 688,000
buy/haul/place (top) = 356,000 × 8	= \$ 2,800,000
buy/haul/place (the rest) = 516,000 × 4	= \$ 2,040,000
base course/asphalt = 590,000 × 4	= \$ 2,360,000
	Total = \$ 12,512,000

### Area 1 with 1000 ppm excavation;

Assume: Volume will triple

∴ excavation - manual = 9600 × 3	= \$ 28,800
- light equip = 72,816 × 3	= \$ 218,436
- heavy equip = 57,260 × 3	= \$ 171,780
load transport = 32,800 × 3	= \$ 98,400
base course = 217,600 × 3	= \$ 652,800
3" topsoil = 63,680 × 3	= \$ 191,040

Other costs remain the same.

$$\therefore \text{Total} = \$ 1,663,250$$

### Other Costs

Add \$ 500,000\* for Monitoring Wells, Safety Program, Mobilization, Dust Control, and Equipment Decontamination

$$= \$ 726,800, \text{ Total}$$

$$\therefore \text{Total Cost} =$$

$$\begin{aligned} & \$ 1,425,520 \\ & + \$ 6,500 \\ & + \$ 104,760 \\ & + \$ 106,840 \\ & + \$ 115,580 \\ & + \$ 1,663,250 \\ & + \$ 12,512,000 \\ & + \$ 726,800 \\ & = \$ 16,664,250 \end{aligned}$$

\* = correction as described  
on pg. 1

\$16,669,250  
+ indirect costs @ 45% = \$ 7,501,163  
+ O&M = \$ 542,630  
Total = \$ 24,713,043  
rounded off = \$ 25,000,000

Effect of 1600 ppm/500 ppm soil cleanup level on other alternatives:  
All assumptions are carried through.

Alternative E: Total Cost = \$ 31,000,000

Alternative F: Total Cost = \$ 45,000,000

Alternative G: Total Cost = \$ 67,000,000

It should be noted that unit costs were taken from the draft FS Report for the NL Site. The above costs are estimates based on the information available at the time. Many assumptions made are conservative, such as 2/3 of surface area available for excavation, 100% access obtained, and that the SLIR files need to be moved from their present locations. Actual detailed cost estimates will be provided during the Remedial Design phase of the NL project.